

I CLAIM AS MY INVENTION:

1. A method for automatically ordering a supply item which is consumed during operation of a device, comprising the steps of:

monitoring a consumption quantity associated with consumption of a supply item during operation of a device and repeatedly comparing said consumption quantity to a threshold representing consumption of said supply item before complete depletion of said supply item;

upon said consumption quantity reaching said threshold, establishing a communication between said device and a data center remote from said device, and automatically generating and communicating ^{an} ~~and~~ ordering message representing an order for said supply item, and including an identification code in said ordering message;

at said data center, identifying, based on said identification code, an entity which has placed said ordering message; and

at said data center, evaluating said ordering message and initiating filling of said order for said supply item.

2. A method as claimed in claim 1 comprising selecting said predetermined consumption quantity from the group consisting of a time quantity, a physical quantity, a monetary quantity and an accounting quantity, dependent on said supply item.

3. A method as claimed in claim 1 wherein said consumption quantity is an item count and wherein the step of monitoring said predetermined consumption quantity and repeatedly comparing said consumption quantity to a threshold comprises

incrementing said item count as said supply item is consumed, and comparing said item count to a predetermined counter reading as said threshold.

4. A method as claimed in claim 3 wherein said device comprises a printing device and wherein said supply item comprises an inking ribbon cassette used during printing in said device, and wherein the step of incrementing said item count comprises incrementing said item count upon each imprint which is made on said inking ribbon cassette, and wherein said predetermined counter reading comprises a number of said imprints which is less than a total number of imprints accommodated by said inking ribbon cassette.

5. A method as claimed in claim 3 wherein said device is a printer device and wherein said supply item comprises ink contained in an ink tank cassette which is used during printing and wherein said item count comprises an amount of said ink from said ink tank which is consumed during each imprint produced by said printer device, and wherein said predetermined counter reading is an ink volume, represented by a plurality of said imprints, which is less than a total volume of ink in said ink tank cassette.

6. A method as claimed in claim 1 wherein said device is a printer device and wherein said supply item is ink contained in an ink tank cassette which is used for printing by said printer device, and wherein the step of monitoring said predetermined consumption quantity and repeatedly comparing said consumption quantity to a threshold comprised disposing electrodes in said ink tank cassette and monitoring a current between said electrodes to identify when said ink in said ink tank cassette falls below a predetermined level, said predetermined level comprising said threshold.

7. A method as claimed in claim 1 wherein the step of monitoring a predetermined consumption quantity and repeatedly comparing said predetermined consumption quantity to a threshold comprises monitoring a plurality of different consumption quantities associated with said supply item and repeatedly comparing each of said plurality of predetermined consumption quantities to respective thresholds which are respectively reached before complete depletion of said supply item.

8. A method as claimed in claim 1 comprising the additional steps of:
at said data center, compiling a data bank containing respective identification codes for a plurality of different ordering entities, each ordering entity having at least one permissible supply item associated therewith; and
upon receipt of said ordering message at said data center, conducting an ordering routine at said data center including searching said data bank to find the ordering entity associated with the identification code in the ordering message and filling said order only with a supply item conforming to said at least one permissible supply item.

9. A method as claimed in claim 8 comprising including an order number in said ordering message, and triggering said ordering routine at said data center dependent on said ordering number.

10. A method as claimed in claim 9 comprising selecting said ordering number from the group consisting of order codes for respectively different supply items and identification numbers for respectively different supply items.

11. A method as claimed in claim 9 comprising physically attaching an indicator representing said ordering number to said supply item.

12. A method as claimed in claim 11 comprising selecting said indicator dependent on a physical state of said supply item.

13. A method as claimed in claim 9 wherein said order number includes an identification number for an amount of said supply item.

14. A method as claimed in claim 9 wherein said order number contains a serial number of said device.

15. A method as claimed in claim 9 wherein said ordering number includes a number identifying a type of said supply item.

16. A method as claimed in claim 9 wherein said ordering number includes a number identifying an ordered amount of said supply item.

17. A method as claimed in claim 9 comprising including a checksum in said ordering message.

18. A method as claimed in claim 1 comprising encrypting said ordering message.

19. A method as claimed in claim 1 comprising:

- assigning a serial number to said device;
- assigning respective, unique order numbers to different supply items;
- allocating order numbers for respectively supply items, permissible for use by said device, to the serial number of said device and storing the allocation at said data center;
- including said serial number and said ordering number in said communication established from said device to said data center, and encrypting said ordering message;

upon receipt of said ordering message at said data center, decrypting said ordering message; and

at said data center after decrypting said ordering message, checking authenticity of said ordering message using said serial number and using at least a part of said ordering number before filling said order.

20. A method as claimed in claim 19 comprising selecting said ordering number from the group consisting of ordering codes respectively associated with different supply items and identification numbers respectively associated with different supply items.

21. A method as claimed in claim 1 comprising generating a confirmation message at said data center when said order is filled, and transmitting said confirmation message from said data center to said device.

22. A method as claimed in claim 1 comprising automatically generating an invoice addressed to said ordering entity at said data center upon filling said order, and transmitting said invoice to said ordering entity.

23. A method as claimed in claim 1 wherein said ordering entity maintains an account accessible by said data center, and comprising the additional step of automatically debiting said account at said data center dependent on a price of said supply item upon filling said order.

24. A method as claimed in claim 1 comprising automatically generating said ordering message and establishing said communication from said device to said data center in a routine for automatic ordering, and allowing a user of said device to selectively disable said routine for automatic ordering.

25. A method as claimed in claim 24 comprising conducting an interrogation routine in said device upon initialization of said device and, within said interrogation routine, allowing for a user input into said device to selectively enable or disable said routine for automatic ordering.

26. A method as claimed in claim 1 wherein generating said ordering message and establishing said communication from said device to said data center are conducted in a routine for automatic ordering, and allowing remote disabling of said routine for automatic ordering by remote switching from said data center in a communication from said data center to said device.

27. An arrangement for ordering a supply item for a device, comprising:
a device which, during operation, consumes at least one supply item;
means in said device for monitoring consumption of said supply item in said device and for generating a consumption quantity representing a degree of consumption of said supply item;
a control unit supplied with said consumption quantity which recognizes, dependent on said consumption quantity, a need to order said supply item before said supply item is completely consumed, and which generates an ordering message representing an order for said supply item and establishes a communication to a remote data center for transmitting said ordering message to order said supply item from said data center.

28. An arrangement as claimed in claim 27 wherein said means for monitoring consumption of said supply item generates a consumption quantity indicative of a degree of consumption of said supply item and dependent on a type of said supply item.

29. An arrangement as claimed in claim 28 wherein said control unit compares said consumption quantity to a threshold and generates said ordering message and establishes said communication if said threshold is exceeded.

30. An arrangement as claimed in claim 29 wherein said device comprises an input unit for entering said threshold into said control unit, said input unit being selected from the group consisting of a keyboard connected to said control unit, a chip card and chip card reader connected to said control unit, and a modem connected to said control unit and communicable with said remote data center.

31. An arrangement as claimed in claim 27 wherein said control unit encrypts said ordering message.

32. An arrangement as claimed in claim 27 further comprising a display connected to said control unit and an input unit connected to said control unit, said control unit displaying said ordering message on said display before transmitting said ordering message to said remote data center, and said input unit allowing a user to modify said ordering message.

33. An arrangement as claimed in claim 32 wherein said keyboard allows suppression of said ordering message so that no ordering message is communicated to said remote data center.

34. An arrangement as claimed in claim 27 wherein said device is a printing device and comprises a printer which produces a plurality of imprints using an ink source as said supply item, said ink source having ink for producing a predetermined number of said imprints, and wherein said means for monitoring said supply item comprises a counter which counts a number of said imprints and which generates a count corresponding to said number of imprints and supplies said count to said control unit, and wherein said control unit generates said ordering message and establishes communication with said remote data center when said count reaches a value which is less than said total number of imprints.

35. An arrangement as claimed in claim 34 wherein said printer is a thermal printer and wherein said ink source is a thermal inking ribbon.

36. An arrangement as claimed in claim 34 wherein said printer is an ink jet printer and wherein said ink source is an ink tank cassette.

37. An arrangement as claimed in claim 31 further comprising a display connected to said control unit, and wherein said control unit displays a number of remaining imprints on said display each time said device is activated.

38. An arrangement as claimed in claim 31 further comprising a display connected to said control unit, and wherein said control unit displays a number of remaining imprints on said display each time said ink source is replaced.

39. An arrangement as claimed in claim 34 wherein said printer is an ink jet printer and wherein said ink source is an ink tank cassette containing ink therein at an ink level which changes dependent on the number of imprints made by said ink jet printer, and wherein said means for monitoring consumption comprises a sensor which

identifies said ink level and wherein said control unit calculates a number of remaining imprints when said ink level, as sensed by said sensor, reaches a predetermined level.

40. An arrangement as claimed in claim 39 wherein said sensor comprises electrodes which interact with said ink in said ink tank cassette which supply a signal to said control unit, and further comprising an input unit connected to said control unit allowing input of characteristic information about said ink, and wherein said control unit calculates said number of remaining imprints dependent on said signal from said electrodes and said characteristic information about said ink.

41. An arrangement as claimed in claim 27 wherein said control unit is adapted to receive a message from said remote data center after a check of authenticity of said ordering message and to modify operation of said device if said ordering message is determined not authentic.

42. An arrangement as claimed in claim 41 wherein said device comprises a display connected to said control unit, and wherein said control unit displays a message on said display if said ordering message is determined to be non-authentic.